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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,660	07/31/2003	Yehuda Azenko	TER-047	3563

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EXAMINER

TU, CHRISTINE TRINH LE

ART UNIT PAPER NUMBER

2138

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/632,660

Applicant(s)

AZENKO ET AL.

Examiner

Christine T. Tu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26-30 is/are allowed.
- 6) ☒ Claim(s) 1-9, 14-25, 31-34 is/are rejected.
- 7) ☒ Claim(s) 10-13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Objections

1. Claims 1, 2, 9, 11, 14-17, 24 and 31 are objected to because of the following informalities:

Claim 1:

At lines 19 and 21, the word "date" should be replaced with --data--.

Claim 2:

At line 2, the word "if" should be replaced with --whether--.

At line 5, the word "date" should be replaced with --data--.

Claim 9:

At lines 21 and 23, the word "date" should be replaced with --data--.

Claim 11:

At line 4, the word "ascending" should be replaced with --descending--.

Claim 14:

At lines 17 and 19, the word "date" should be replaced with --data--.

Claim 15:

At line 15, the term "k+2t" should be replaced with -- (k+2t) stands for --

Claim 16:

At line 14, the term "k+2t" should be replaced with -- (k+2t) stands for --

Claim 17:

At line 4, the word "ascending" should be replaced with --descending--.

Claim 24:

At line 4, the term "UCD" should be replaced with – upstream channel descriptor (UCD) --.

Claim 31:

At line 5, the term "PER" should be replaced with – packet error rate (PER) --.

At line 6, the term "CMs" should be replaced with – cable modems (CMs) --.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. Claims 7-8, 15-16 and 31-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 (depends on claim 1):

At lines 10 and 20, the phrase "proceeding to step 11" is lack of antecedent basis due to the fact that up to step 10 (only) is being recited in claim 1.

Claim 15:

At line 8, the term "i.e." (stands for 'for example') renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

At line 11, it is not clear what the abbreviation of "IUC" stands for.

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Claim 16:

At line 7, the term "i.e." (stands for 'for example') renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

At line 9 it is not clear what the abbreviation of "IUC" stands for.

Claim 31:

At line 5, it is not clear what the abbreviation of "MAP" stands for.

Claim 32:

The preamble of "A cable modem termination system ... to execute a media access control process and wherein:" is confusing.

Firstly, it is not clear where the preamble should be ended due to lack of the word "comprising: ".

Secondly, it is not clear what element(s) does the cable modem termination system have as it is recited in the preamble of the claim.

Claims 8 and 33-34:

These claims are rejected because they depend on claims 7 and 32, and contain the same problems of indefiniteness.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-6, 9, 14, 17-25 and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anandakumar et al. (6,765,904 and Anandakumar hereinafter).

Claims 20-22:

Anandakumar discloses the invention substantially as claimed. Anandakumar teaches (figure 16) a process of rate/diversity adaptation comprises a feature of initialize a vector STATE having vector element value s (source rate) and d (diversity rate) (step 1605), a feature of inputting a QoS datum and measuring the packet loss fraction L (step 1611), features of comparing the value L to Thresholds 1, 2 and A (steps 1615, 1617, 1625, 1635), and features of updating the vector state into a NEWSTATE based

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on the result of the comparison (steps 1621, 1623, 1641, 1651) (figure 16, column 4 lines 59-60, column 36 line 4-column 37 line 54).

Anandakumar does not explicitly teach the noise on a channel. However, Anandakumar teaches the packet loss determination (step 1611). It would have been obvious to one skilled in the art at the time the invention was made to realize that Anandakumar's packet loss would have includes packet noise. One having ordinary skill in the art would be motivated to realize so because Anandakumar teaches that packet losses due to bit error in modem/satellite links (column 6 lines 45-46).

Claim 23:

Anandakumar teaches that if the packet loss fraction L does not exceed Threshold1, then the value L is further compared with Threshold2 (step 1625) (figure 16).

Claim 24:

Anandakumar further teaches features of updating the vector state into a NEWSTATE based on the result of the comparison (steps 1621, 1623, 1641, 1651). Such updated vector state is output (step 1661) (figure 16, column 4 lines 59-60, column 36 line 4-column 37 line 54).

Claim 25:

Anandakumar's NEWSTATE is updated according to a skilled worker (column 36 lines 31-38 and lines 43-50).

Claim 32:

Anandakumar discloses the invention substantially as claimed. Anandakumar teaches (figure 15) a packet voice digital signal processor (DSP) is implemented as an integrated circuit (1511) and wherein the IC (1511) is improved with software manufactured in the ROM. Anandakumar also teaches (figure 16) a process (in the software) of rate/diversity adaptation comprises a feature of initialize a vector STATE having vector element value s (source rate) and d (diversity rate) (step 1605), a feature of inputting a QoS datum and measuring the packet loss fraction L (step 1611), features of comparing the value L to Thresholds 1, 2 and A (steps 1615, 1617, 1625, 1635), and features of updating the vector state into a NEWSTATE based on the result of the comparison (steps 1621, 1623, 1641, 1651) (figures 15-16, column 4 lines 56-60, column 34 line 34-column 35 line 8, column 36 line 4-column 37 line 54).

Anandakumar does not explicitly teach the cable modem system. However, Anandakumar teaches packet voice digital signal processor (DSP) (figure 15). It would have been obvious to one skilled in the art at the time the invention was made to realize that Anandakumar's packet voice digital signal processor (DSP) would have been named as "cable modem system". One having ordinary skill in the art would be motivated to realize so because changing the name of Anandakumar' DSP would not affect the performance of the DSP.

Claims 33-34:

Anandakumar's packet losses are due to bit errors (column 6 lines 45-46).
Anandakumar further teaches measuring the packet loss fraction L (step 1611), features of comparing the value of packet loss fraction L to Thresholds 1, 2 and A (steps 1615, 1617, 1625, 1635), and features of updating the vector state into a NEWSTATE based on the result of the comparison (steps 1621, 1623, 1641, 1651). The NEWSTATE is updated according to any software method selected by a skilled worker (figure 16, column 36 line 4-column 37 line 54).

Claim 1:

Anandakumar discloses the invention substantially as claimed. Anandakumar teaches (figure 16) a process of rate/diversity adaptation comprises a feature of initialize a vector STATE having vector element value s (source rate) and d (diversity rate) (step 1605), a feature of inputting a QoS datum and measuring the packet loss fraction L (step 1611), features of comparing the value L to Thresholds 1, 2 and A (steps 1615, 1617, 1625, 1635), and features of updating the vector state into a NEWSTATE based on the result of the comparison (steps 1621, 1623, 1641, 1651). Such Anandakumar's packet losses are due to bit errors (figure 16, column 4 lines 59-60, column 36 line 4-column 37 line 54, column 6 lines 45-46).

Anandakumar does not explicitly teach the features of resetting a flawed packet counter and resetting a total packets received counter. However, Anandakumar teaches that at the BEGIN (1601) of the process, a initializing feature is included for a

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vector STATE (1605) (figure 16). It would have been obvious to one skilled in the art at the time the invention was made to realize that Anandakumar's process would have includes resetting a flaw counter and a total packet received counter. One having ordinary skill in the art would be motivated to realize so because in order for Anandakumar's process to report the loss fraction L after receiving QoS datum, the features of resetting a flaw counter and a total packet/datum would have been also included.

Claim 2:

Anandakumar teaches the feature of determining whether the RTCP packet is present in the received data, if not, operations branch to a RETURN (1614) (column 36 lines 11-16).

Anandakumar further teaches features of updating the vector state into a NEWSTATE based on the result of the comparison (steps 1621, 1623, 1641, 1651). Such updated values of STATE are output as control signals (sij, dij) (step 1661). The NEWSTATE is updated according to any software method selected by a skilled worker (figure 16, column 36 line 4-column 37 line 54).

Claims 3-5:

Anandakumar teaches (figure 27) how adaptive multi-path routing is combination with adaptive rate/diversity to form a new combination process for integrated circuit. When a packet loss becomes unacceptable, the second path is reestablished via the

third proxy. In addition, the multi-path routing process has its source rate adaptively varied (figure 27, column 46 lines 35-59).

Claim 6:

Anandakumar teaches that the vector state maintains the current state (step 1641) or the vector states being updated to a NEWSTATE (steps 1621, 1623, 1631). The NEWSTATE is updated according to any software method selected by a skilled worker, such as by looking up in a table. Such updated values of STATE are output as control signals (s_{ij} , d_{ij}) (step 1661) (figure 16, column 36 line 4-column 37 line 54).

Claim 9:

This claim is similar to claim 1 except that the noise has been recited instead of the erroneous packet.

Anandakumar does not explicitly teach the noise on a channel. However, Anandakumar teaches the packet loss determination (step 1611). It would have been obvious to one skilled in the art at the time the invention was made to realize that Anandakumar's packet loss would have includes packet noise. One having ordinary skill in the art would be motivated to realize so because Anandakumar teaches that packet losses due to bit error in modem/satellite links (column 6 lines 45-46).

Claims 14, 17-19:

Claims 14 and 17-19 are rejected for reasons similar to those set forth against claims 1 and 5-6.

6. Claims 10-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 7- 8, 15-16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

8. Claims 26-30 are allowable over the prior arts of record.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine T. Tu whose telephone number is (571)272-3831. The examiner can normally be reached on Mon-Thur. 8:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571)272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Christine T. Tu
Primary Examiner
Art Unit 2138

March 16, 2006